

Short Answer:

Answer the following questions with complete sentences in your own words. You are encouraged to conduct your own research online or through other methods before answering the questions. If you research online, please consult multiple sources before you write down your answers. You are expected to be able to explain your answers in detail (Provide examples for each question).

1. What is System.IO? What is it used for?
2. What is a stream in C#?
3. What is the difference between the File class and FileStream class?
4. What does the following code do:

```
File.WriteAllText(@"C:\ChristmasMusic\Playlist.txt", "This is a  
playlist for Christmas Hits");
```

5. What are serialization and deserialization
6. C# exceptions occur in runtime or compile time?
7. What is a user-defined Exception and why do we need to use a user-defined Exception? How to create one?
8. Is there anything wrong with the following exception handler as written? Will this code compile?

```
try { }  
catch (Exception e) { }  
catch (DivideByZeroException a) { }
```

9. What is the Exception filter?
10. What is a delegate?
11. What is the common usage of delegate?
12. What are the built-in generic delegates?
13. Define a delegate that points to the following methods:

```
public static string ToNumString (int num)  
{  
    string returnStr = $"Number {num}";  
    return returnStr;  
}
```

14. What is a multicast delegate?
15. Explain lambda expression, what does it do?